



Infectious Disease Epidemiology Section
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HEPATITIS E

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The hepatitis E virus (HEV) is a nonenveloped, RNA virus enterically transmitted. It was formerly classified in the family Caliciviridae, genus Calicivirus; however, HEV has been reassigned to an unassigned genus of “hepatitis E-like” viruses because certain characteristics distinguish HEV from typical caliciviruses.

Epidemiology

Transmission of HEV is by the fecal-oral route. Virus excretion in stools has been demonstrated up 14 days after illness onset.

Outbreaks of hepatitis E and sporadic cases have occurred over a wide geographic area, primarily in countries with inadequate environmental sanitation. The attack rate is highest among young adults and uncommon in children and elderly.

The incubation period for hepatitis E is approximately 28 to 40 days

Hepatitis E is an important medical pathogen in many developing countries, but cases are rarely reported from the United States. Antibody to hepatitis E virus (anti-HEV) is found in less than one percent of U.S. citizens, with most of these cases occurring in city populations. Zoonotic spread of the virus is suspected.

In an attempt to investigate possible modes of transmission for hepatitis E, sera obtained from wild rats trapped in Louisiana were tested for anti-HEV. Forty-four percent of the rats captured in Louisiana were seropositive for anti-HEV. The seropositive rats came from both urban and rural areas and the prevalence of anti-HEV IgG increased in parallel with the estimated age of the rats. These findings lead to the speculation that rats may be involved in the puzzlingly high prevalence of anti-HEV among some U.S. city dwellers (Kabrane-Lazizi Y, 1999. Am.J.Trop.Med & Hyg 61:331).

Clinical Description

The clinical course of Hepatitis E is similar to Hepatitis A; there is no evidence of a chronic form. Subclinical infection is common. The acute illness comprises jaundice, malaise, anorexia, fever, abdominal pain, and arthralgia.

Laboratory Testing

Acute HEV infection is confirmed by detecting immunoglobulin IgM antibody to HEV (anti-HEV) in serum or by detecting HEV RNA by reverse-transcriptase polymerase chain reaction (RT-PCR) in serum or feces. Serologic and PCR-based assays for the diagnosis of acute HEV infection are available in research and commercial laboratories. However, none of these assays are approved by the US Food and Drug Administration.

Specific IgM and IgG immune responses to HEV occur early in the infection, usually by the onset of clinical illness. In this respect, hepatitis E resembles hepatitis A, and a serologic diagnosis usually can be made at the time of presentation of the patient. IgM anti-HEV disappears after several months, whereas IgG anti-HEV persists

Surveillance

Hepatitis E is a reportable condition in Louisiana.

Report and Confirm Cases

- Upon receipt of a report of hepatitis E, complete the viral hepatitis case report (CDC 53.1).
- Contact the physician for diagnostic for clinical confirmation. Presently, hepatitis E is primarily a diagnosis of exclusion of other hepatitis types.
- Determine the source of infection such as travel history, exposure to fecal contaminated food or water.

Case Definition

Diagnosis depends on the clinical and epidemiologic features and exclusion of other etiologies of hepatitis, especially hepatitis A, by serologic means. Serologic tests have been developed for antibody to HEV.

At the present time, a case of HEV must be evaluated as non- A, non-B, non-C hepatitis in conjunction with:

- discrete onset;
- jaundice or serum aminotransferase levels 2 1/2 times normal levels; and
- test negative for Anti-HAV IgM, HbsAg or Anti-HBc IgM, and HCV.

Case Investigation

Since risk factors for HEV infection are limited, the case should be thoroughly interviewed regarding possible exposure sources and travel history.

Prevention

- If the case is associated with high risk settings (i.e., child care centers, eating establishments), notify the Infectious Disease Epidemiology Section immediately and request recommendations. Timeliness of reporting is of essence since postexposure measures for contacts have not been established and other interventions may be necessary.
- Passive immunoprophylaxis against HEV infection with immune globulin prepared in the United States has not proven effective.
- Educate travelers to developing countries regarding prudent hygienic practices including avoiding drinking water (and beverages with ice) of unknown purity, uncooked shellfish, and uncooked fruits and vegetables that are not peeled or prepared by the traveler.
- Isolation of the Hospitalized Patient: Standard precautions are recommended.